

Remarks

Claims 46-58 and 60-69 remain in the application. The Examiner has finally rejected all of the claims under 35 USC 102(b) in light of U.S. Patent 5,669,979 to Elliott et al (hereinafter the '979 patent). In addition, the Examiner has objected to claims 58, 62-63 and 66-68 as being of improper dependent form for failing to limit the subject matter of a previous claim. By this response, the Applicants have cancelled claim 68 and amended claim 69. Independent claims 46 and 64, as well as dependent claims 58, 62 and 63 have not amended for reasons discussed below.

Claim objections under 37 CFR 1.75(c)

The Applicants respectfully traverse the Examiner's objection to claim 58. The claim requires that the supply of conditioning gas is selected from the group consisting of accelerant supply and decelerant supply. Rather than being a recitation to a gas in isolation from its container (as the Examiner suggests), the claim positively recites structure (in the form of a supply of conditioning gas), from which various gases can be dispersed into a mixing chamber. Claim 58 merely places an additional limitation on claim 57, requiring that the "supply" be configured to deliver accelerants or decelerants. It will be appreciated by those skilled in the art that the configuration of such a supply, taken in toto, may necessitate particular attributes peculiar to the type of gas being used, including, for example, material and structural features to give gas-specific temperature or pressure qualities.

The Applicants respectfully traverse the objection to claim 62, wherein the Examiner maintains at numbered paragraph 9 that "the convergence takes place in the gaseous layer, without indicating where the gaseous layer is", and that such recitation "does not impart additional structure". To the contrary, claim 62, in conjunction with claim 46, does positively recite where the gaseous layer is, by claiming that the inlet structure provides a flow of the gaseous constituent to the workpiece surface (claim 46), and that the gaseous constituent is in the form of a layer thick enough to include the region adjacent the workpiece surface where the beam of electromagnetic radiation converges (claim 62).

The Applicants respectfully traverse the objection to claim 63, wherein the Examiner maintains at numbered paragraph 10 that "the nature of the gas supplied is of limited relevance." First, by stating that something is of "limited relevance" is to argue matters of degree rather than matters of applicability. By taking the position that a claim recitation is of only limited relevance, the Examiner necessarily implies that there is at least a modicum of such relevance. In such a circumstance, the degree of relevance is more appropriately analyzed under an art-based analysis rather than under the present objection-based approach used by the Examiner. Second, for reasons discussed below, the Applicants submit that continued art-based rejection of the claims cannot be maintained, as claim 63 further limits claim 46, and that the cited art does not render either claim unpatentable.

The Applicants respectfully traverse the Examiner's objection to claims 66 and 67 for the same reasons as discussed above in relation to claim 58, as the first and second gas sources of claims 66 and 67 are analogous structure to that of the supply of conditioning gas mentioned in claim 58.

Claim rejections under 35 USC 102(b)

Both of the independent claims require the system to include a source of electromagnetic radiation that can produce a beam that converges in close proximity to, but not on, the surface of a workpiece. By contrast, the device of the '979 patent expressly teaches that a beam being generated converges on the surface of the workpiece. This is a reiteration of the Applicant's earlier remarks, reproduced at numbered paragraph 14 of the present Office Action. In response, the Examiner notes (at numbered paragraph 15) that "[f]unction is an acceptable means of imparting structure", and a reference that is "capable of performing the same function and possessing the same structure will provide a proper anticipation rejection." The Applicants submit that this second quote goes too far. While it has been held that anticipation is not avoided where the prior teaching deliberately or necessarily produces the result intended (see, for example, *In re King*, 231 USPQ 136, 138 (Fed. Cir. 1986)), the logical concomitant is also true, viz., the mere fact that a certain result may be achieved from the structure taught is insufficient as

a basis for an anticipatory rejection. *In re Schreiber*, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). Taken together, these holdings make it axiomatic that the Examiner must provide a basis in fact, technical reasoning or both to reasonably support the determination that the desired function "necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Int'f 1990). In the instant case, not only is the result sought (the generation of a high flux of activated reactive gaseous species located close to, but not on, the workpiece surface to chemically treat such surface) not discussed in the '979 patent, it is expressly avoided, as shown repeatedly in FIGs. 1, 7 and 15, where the source of electromagnetic radiation (a laser beam in all instances in the '979 patent) is made to converge on the surface. As such, it cannot be said that the function of having the beam converge above the workpiece surface to produce the desired result necessarily flows from the teaching of the '979 patent.

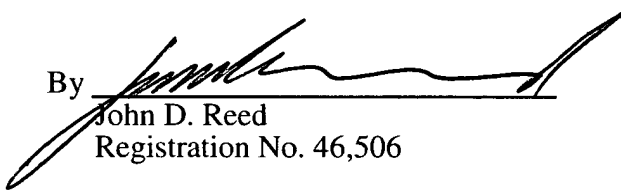
In numbered paragraph 15, the Examiner speculates that the beam of the '979 patent "does begin to converge above the substrate being treated" and that the point of convergence of the '979 patent "is adjustable". This first point is unsupported by the facts, while the second implicitly acknowledges that attainment of the admittedly structural recitations made possible by the claimed functional verbiage necessitates modification of the '979 patent. Regarding the first point, there is nothing in the teaching of the '979 patent to suggest operating its structure in a way similar to that of the claimed invention. To the contrary, the inventor of the '979 patent is intent on delivering a laser beam such that it strikes the workpiece surface at an acute angle to avoid damaging the surface. Moreover, while the '979 patent discusses using numerous optical elements (including mirrors and lenses, as discussed generally at column 10) to operate on the laser beam that in theory could be used to adjust the beam in such a way as to function in a manner similar to that of the claimed device, there is nothing therein that necessarily leads to the modifications discussed by the Examiner. In fact, repeated mention in the '979 patent to the beam striking the workpiece surface to produce a knife edge (column 10, line 14 and column 20, line 23) and that the beam is focused on the surface (column 11, lines 42 and 63-64, column 12, line 19, among other places) belies the Examiner's position.

Regarding the second point, the Supreme Court has held that a prior device capable of slight modification so as to operate in the same manner as the claimed device did not anticipate. *Topliff v. Topliff*, 145 U.S. 156 (1892). The Examiner further asserts in numbered paragraph 15 that "a reference capable of performing the same function" provides a proper anticipation rejection; however, the Examiner does not articulate the aforementioned supporting basis in fact or technical reasoning from *Levy* for such position. In addition to being contrary to the holding in *Levy* above, this position runs afoul of the Court's stricture that "prior devices capable of being adjusted so as to operate in the same manner as the patented device [do] not anticipate" where the prior device was not shown to have been used and operated in the same way. *Clough v. Gilbert & Barker Manufacturing*, 106 U.S. 166 (1882).

For all of the above reasons, the Applicants respectfully submit that the device taught in the '979 patent does not anticipate the invention of the independent claims, and that such claims are allowable over the cited art. Since the dependent claims place further limitations on the independent claims, they too are allowable over the cited art. In addition, the Applicants believe that the objections to claims 58, 62-63 and 66-68 have been overcome. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response.

Respectfully submitted,
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